

HASEGAWA et al
Serial No. **Unknown**

REMARKS

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned "**Version with markings to show changes made.**"

The above amendments are made to place the claims in a more traditional format.

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

3. (Amended) A carbon black producing apparatus according to Claim 1 [or 2] having an additional fuel feed port in each of the oxygen-containing gas feed ports.

4. (Amended) A carbon black producing apparatus according to [any one of Claims 1 to 3] Claim 1, wherein the shape of the oxygen-containing feed port opened into the reactor is non-circular.

5. (Amended) A carbon black producing apparatus according to [any one of Claims 1 to 4] Claim 1, wherein the shape of the oxygen-containing gas feed port is circular, and the opening diameter (D_a) of the oxygen-containing gas feed port and the shortest distance (D_w) between the oxygen-containing gas feed port and the inner wall of the reactor have a relation of $D_w < 1.5D_a$.

6. (Amended) A carbon black producing apparatus according to [any one of Claims 1 to 4] Claim 1, wherein the shape of the oxygen-containing gas feed port is non-circular, and the opening diameter (D_L) of the oxygen-containing gas feed port and the shortest distance (D_w) between the oxygen-containing gas feed port and the inner wall of the reactor have a relation of $D_w < 1.5D_L$.

7. (Amended) A carbon black producing apparatus according to [any one of Claims 1 to 6] Claim 1, wherein the distance from the crossing point of the center line of

the fuel flow supplied from the fuel feed port and the center line of the oxygen-containing gas flow supplied from the oxygen-containing gas feed port to the end of the oxygen-containing gas feed port is not less than twice the opening diameter of the oxygen-containing gas feed port.

8. (Amended) A method of producing carbon black comprising using a producing apparatus as defined in [any one of Claims 1 to 7] Claim 1.

10. (Amended) A method of producing carbon black according to Claim 8 [or 9], wherein the average temperature of the first reaction zone is not lower than 1,600°C.

11. (Amended) A method of producing carbon black according to [any one of Claims 8 to 10] Claim 8, wherein the combustion gas flow temperature in the vicinity of the feedstock hydrocarbon feed port is not lower than 1,600°C.

12. (Amended) A method of producing carbon black according to [any one of Claims 8 to 11] Claim 8, wherein the oxygen concentration in the vicinity of the feedstock hydrocarbon feed port is not more than 3%.

15. (Amended) A method of producing carbon black according to Claim 13 [or 14], wherein the combustion gas temperature in the vicinity of the feedstock hydrocarbon feed port is not lower than 1,600°C.

16. (Amended) A method of producing carbon black according to [any one of Claims 13 to 15] Claim 13, wherein the oxygen concentration in the vicinity of the feedstock hydrocarbon feed port is not more than 3%.

19. (Amended) A method of producing carbon black according to Claim 17 [or 18], wherein the reactor wall surface in the first reaction zone is under an oxidizing atmosphere.

20. (Amended) A method of producing carbon black according to [any one of Claims 17 to 19] Claim 17, wherein the average temperature of the first reaction zone is not lower than 1,600°C.

21. (Amended) A method of producing carbon black according to [any one of Claims 17 to 20] Claim 17, wherein the oxygen concentration in the vicinity of the feedstock hydrocarbon feed ports is not more than 3%.

24. (Amended) A furnace combustion apparatus according to Claim 22 [or 23], wherein the distance from the crossing point of the fuel flow and oxygen-containing gas flow to the end of the fuel feed port is not less than 30 times the opening diameter of the fuel feed port.

25. (Amended) A furnace combustion apparatus according to [any one of Claims 22 to 24] Claim 22, wherein at least part of the furnace inner wall is made of magnesia- or micromagnesia-based refractory material.

26. (Amended) A furnace combustion method comprising using a furnace combustion apparatus as defined in [any one of Claims 22 to 25] Claim 22.

29. A furnace combustion method according to [any one of Claims 26 to 28] Claim 26, wherein the inner wall surface of the combustion furnace is under an oxidizing atmosphere.